APPARATUS, SYSTEM AND METHOD FOR FLUID DELIVERY

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application is Continuation of U.S. patent application Ser. No. 12/649,878, filed Dec. 30, 2009, now U.S. Pat. No. 9,839,743, published Dec. 12, 2017 and entitled Infusion Pump Assembly (Attorney Docket No. G84), which is a Non-Provisional Patent Application of U.S. Provisional Patent Application Ser. No. 61/142,042, filed Dec. 31, 2008 and entitled Method, System and Apparatus for Verification of Volume and Pumping (Attorney Docket No. G78), and U.S. Provisional Patent Application Ser. No. 61/225,794, filed Jul. 15, 2009 and entitled Infusion Pump Assembly (Attorney Docket No. H48) each of which is hereby incorporated herein by reference in its entirety.

[0002] U.S. patent application Ser. No. 12/649,878, is a Continuation-in-Part of U.S. patent application Ser. No. 12/347,981, filed Dec. 31, 2008, now U.S. Pat. No. 8,496,646, issued Jul. 30, 2013 and entitled Infusion Pump Assembly (Attorney Docket No. G77), which also claims priority from the following U.S. Provisional Patent Applications:

[0003] U.S. Provisional Patent Application Ser. No. 61/018,054, filed Dec. 31, 2007 and entitled Patch Pump with Shape Memory Wire Pump Actuator (Attorney Docket No. E87);

[0004] U.S. Provisional Patent Application Ser. No. 61/018,042, filed Dec. 31, 2007 and entitled Patch Pump with External Infusion Set (Attorney Docket No. E88);

[0005] U.S. Provisional Patent Application Ser. No. 61/017,989, filed Dec. 31, 2007 and entitled Wearable Infusion Pump with Disposable Base (Attorney Docket No. E89);

[0006] U.S. Provisional Patent Application Ser. No. 61/018,002, filed Dec. 31, 2007 and entitled Patch Pump with Rotational Engagement Assembly (Attorney Docket No. E90);

[0007] U.S. Provisional Patent Application Ser. No. 61/018,339, filed Dec. 31, 2007 and entitled System and Method for Controlling a Shape-Memory Actuator (Attorney Docket No. E91);

[0008] U.S. Provisional Patent Application Ser. No. 61/023,645, filed Jan. 25, 2008 and entitled Infusion Pump with Bolus Button (Attorney Docket No. F49);

[0009] U.S. Provisional Patent Application Ser. No. 61/101,053, filed Sep. 29, 2008 and entitled Infusion Pump Assembly with a Switch Assembly (Attorney Docket No. F73);

[0010] U.S. Provisional Patent Application Ser. No. 61/101,077, filed Sep. 29, 2008 and entitled Infusion Pump Assembly with a Tubing Storage (Attorney Docket No. F74);

[0011] U.S. Provisional Patent Application Ser. No. 61/101,105, filed Sep. 29, 2008 and entitled Improved Infusion Pump Assembly (Attorney Docket No. F75); and

[0012] U.S. Provisional Patent Application Ser. No. 61/101,115, filed Sep. 29, 2008 and entitled Filling Apparatus and Methods for an Infusion Pump Assembly (Attorney Docket No. G08), each of which is hereby incorporated herein by reference in its entirety.

[0013] U.S. patent application Ser. No. 12/347,981 is also a Continuation-in-Part Application of U.S. patent application Ser. No. 11/704,899, filed Feb. 9, 2007, now U.S. Pat. No. 8,414,522, issued Apr. 9, 2013 and entitled Fluid Delivery Systems and Method (Attorney Docket No. E70), which also claims priority from the following U.S. Provisional Patent Applications, all of which are hereby incorporated herein by reference in their entireties:

[0014] U.S. Provisional Patent Application Ser. No. 60/772,313, filed Feb. 9, 2006 and entitled Portable Injection System (Attorney Docket No. 1062/E42); U.S. Provisional Patent Application Ser. No. 60/789,243, filed Apr. 5, 2006 and entitled Method of Volume Measurement for Flow Control (Attorney Docket No. 1062/E53); and

[0015] U.S. Provisional Patent Application Ser. No. 60/793,188, filed Apr. 19, 2006 and entitled Portable Injection and Adhesive System (Attorney Docket No. 1062/E46).

[0016] U.S. patent application Ser. No. 11/704,899 may also be related to one or more of the following U.S. patent applications, all of which are hereby incorporated herein by reference in their entireties:

[0017] U.S. patent application Ser. No. 11/704,896, filed Feb. 9, 2007, now U.S. Pat. No. 8,585,377, issued Nov. 19, 2013 and entitled Pumping Fluid Delivery Systems and Methods Using Force Application Assembly (Attorney Docket No. 1062/E71);

[0018] U.S. patent application Ser. No. 11/704,886, filed Feb. 9, 2007, now U.S. Pat. No. 8,545,445, issued Oct. 1, 2013 and entitled Patch-Sized Fluid Delivery Systems and Methods (Attorney Docket No. 1062/E72);

[0019] U.S. patent application Ser. No. 11/704,897, filed Feb. 9, 2007, now U.S. Pat. No. 8,113,244, published Feb. 14, 2012 and entitled Adhesive and Peripheral Systems and Methods for Medical Devices (Attorney Docket No. 1062/E73); and

[0020] U.S. Provisional Patent Application Ser. No. 60/889,007, filed Feb. 9, 2007 and entitled Two-Stage Transcutaneous Inserter (Attorney Docket No. 1062/E74).

FIELD OF THE INVENTION

[0021] This application relates generally to fluid delivery systems, and more particularly to apparatus, system and method for fluid delivery.

BACKGROUND OF THE INVENTION

[0022] Many potentially valuable medicines or compounds, including biologicals, are not orally active due to poor absorption, hepatic metabolism or other pharmacokinetic factors. Additionally, some therapeutic compounds, although they can be orally absorbed, are sometimes required to be administered so often it is difficult for a patient to maintain the desired schedule. In these cases, parenteral delivery is often employed or could be employed.

[0023] Effective parenteral routes of drug delivery, as well as other fluids and compounds, such as subcutaneous injection, intramuscular injection, and intravenous (IV) administration include puncture of the skin with a needle or stylet. Insulin is an example of a therapeutic fluid that is self-injected by millions of diabetic patients. Users of parenterally delivered drugs may benefit from a wearable device that would automatically deliver needed drugs/compounds over a period of time.

[0024] To this end, there have been efforts to design portable and wearable devices for the controlled release of therapeutics. Such devices are known to have a reservoir such as a cartridge, syringe, or bag, and to be electronically